

REMARKS

Reconsideration and allowance are requested.

Editorial amendments have been made to the specification. No new matter has been added.

Claims 1-5 and 15-20 stand rejected under 35 USC §102(b) as being anticipated by Schieder et al. (EP 1139605). This rejection is respectfully traversed.

The focus of Schieder is to avoid an empty transmission queue which likely causes release of the communications connection. Such a premature break in the connection would not only be inconvenient but would also require unnecessary delays in order to re-establish the connection. Schieder solves this problem by determining the total amount of data buffered in the transmission queue of the mobile station and sends that total amount to the network. The network then allocates resources in accordance with that buffered amount but with the important requirement that “at least one data packet remains in the subscriber terminal side transmitter buffer queue.” See [0040].

In contrast to Schieder, the claims in this case are directed to overcoming problems associated with antenna beam conflicts. As explained on page 3 of the instant application, antenna beam conflicts may be encountered with adaptive antennas if information for spacially-separated mobile stations covered by different antenna beams needs to be transmitted simultaneously. Because adaptive antennas use narrow antenna beams which only cover part of a cell, the transmitted signal can only be optimized for one of the mobile stations if they are not located in areas covered by the same antenna beam. Beam conflicts may occur in some cellular

networks, for example, when uplink transmission information and user payload data intended for mobiles in different antenna beams are combined in the same data block or packet.

Claims 1 and 15 are amended to further emphasize the differences between these claims and the teachings of Schieder. For example, claims 1 and 15 now recite that it is the buffered amount of information being transmitted in the uplink direction by the mobile station to the network that is determined. In addition, a first permission or second permission is determined for the mobile station "based on the buffered amount of information." Then, if the buffered amount of uplink information is less than a predetermined value, the first permission to transmit a first amount of information is sent to the first mobile station. As claims 1 and 15 recite, that "first amount of information may include all of the buffered information." So the very thing that Schieder must avoid -- an empty buffer -- is not avoided in claims 1 and 15. If the buffered amount of uplink information is equal to or exceeds the predetermined value, the second permission is sent to the mobile station so that the mobile station can transmit the greater second amount of information "to reduce the number of times permission to transmit must be sent to the first mobile station." The mobile station then will transmit the amount of information in accordance with the permission transmitted to the mobile station.

Accordingly, the data transmission approach in claims 1 and 15 contradicts the major goal of Schieder, namely, to avoid having an empty transmit buffer. Both claims 1 and 15 recite "wherein the first amount of information or the second amount of information may include all of the buffered information." This makes it possible for the mobile to send the entire data packet if the previously given permission permits. Consider the non-limiting example in which a USF equals 4 permitting the mobile to transmit the entire downlink packet, thereby reducing the number of times needed to send the USF message. Indeed, the USF need only be sent, once even

for a long message including several data packets. Withdrawal of the rejections based on Schieder is respectfully requested.

Claims 12-14 and 27-30 stand rejected under 35 USC §102 as being anticipated by Ball (2003/0174687). This rejection is respectfully traversed.

Ball teaches encoding control information with “a stronger error protection than the user data.” See abstract. Significantly, Ball’s embodiments involve sending first and second radio signals corresponding to first and second different antenna beams. For example, Figure 4 shows that a full sector antenna beam is transmitted from antenna 6 so that all subscriber stations in this entire cell C1 can extract the uplink state flag corresponding to the control information. See paragraph [0030], lines 5-9. In contrast to the cell wide antenna beam sent from the non-directional antenna 6, an adaptive antenna 7 transmits payload data in a focused narrow antenna beam or lobe 8 as shown in Figure 4. The “transmission powers from the non-directional antenna 6 and from the adaptive antenna 7 means that payload data transmitted in a packet can be reliably decoded only in the area of lobe 8.” See paragraph [0029]. The embodiment in Figures 5 and 6 shows using two different antenna beams with one lobe 8 being directed to the mobile station MS1 and a second, weaker antenna beam or lobe 10 directed a second mobile station MS2.

Claims 14 and 27, in contrast to Ball, specifically recite that the first information with the first amount of encoding is associated with the first antenna beam and the second information with the lesser amount of coding is transmitted using the second antenna beam. Notwithstanding the fact that the first information and the second information are associated with two different antenna beams, the first and second information are combined in one data block and that data block is transmit on just the second antenna beam. In other words, both the first information

with the larger amount of coding and the second amount of information with the lesser amount of coding are transmitted in one beam -- the second antenna beam. Ball clearly transmits the two differently coded information intended for two different mobile stations on two different antenna beams. Accordingly, the anticipation rejection based on Ball is improper and should be withdrawn.

Claims 10, 11, 25, and 26 stand rejected under 35 USC §103 as being unpatentable over Schieder in view US Patent 5,838,674 to Forssen. This rejection is respectfully traversed.

Forssen describes sending broadcast signals from a base station so that mobile stations located anywhere in the cell can tune to that broadcast. But, if traffic channels on the broadcast carrier are not being used to transmit downlink signals to particular mobiles, dummy signals are transmitted instead in order to ensure that a mobile unit tuning to the broadcast carrier detect signal energy. In other words, dummy signals are transmitted on idle portions of traffic channels.

In contrast, claim 10 combines first information that is associated with a first antenna beam with dummy second information that is associated with the second antenna beam. There is no teaching in Forssen of dummy information being associated with a different antenna beam than the first information associated with a first antenna beam. Moreover, there is no teaching in Forssen of combining the first information associated with one antenna beam with second dummy information associated with a second antenna beam "into a first data unit."

Nor does Forssen have to make a decision about sending that data unit on one or the other of the claimed antenna beams. Because there is only one antenna beam broadcast in the cell with the broadcast carrier, such a beam selection decision is simply not an issue.

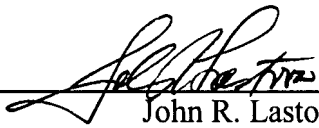
Stephen Craig
Appl. No. 10/658,756
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Accordingly, even if Forssen and Schieder could be combined for purposes of argument, that combination fails to disclose multiple features recited in claims 10 and 25. Nor does the Examiner point out where the features of dependent claims 11 and 26 are found in either of Schieder or Forssen in which the claim second information is combined with the dummy first information into a second data unit and that second data unit sent to the second mobile station using the second antenna beam.

The application is in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

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